## ABSTRACT OF THE INVENTION

The invention described herein consists of an oxygen deliver source for local blood or tissue oxygenation. The invention consists of porous polymer structures being part of a medical device from which a liquid oxygen carrier is locally or systemically released. The substrate membrane impregnated with the oxygen carrier may be a part of a tube, a balloon, a perfusion balloon, a stent and a wire. The substrate membrane is sealed with a removable housing for the oxygen carrier to allow storage of the medical device.